

(19) World Intellectual Property Organization  
International Bureau(43) International Publication Date  
24 January 2002 (24.01.2002)

PCT

(10) International Publication Number  
WO 02/07474 A1(51) International Patent Classification<sup>7</sup>: H04Q 7/38 (74) Agent: GÖTEBORGS PATENTBYRÅ DAHLS AB;  
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(21) International Application Number: PCT/SE01/01642

(22) International Filing Date: 16 July 2001 (16.07.2001)

(25) Filing Language: English

(26) Publication Language: English

(30) Priority Data:  
0002681-5 14 July 2000 (14.07.2000) SE  
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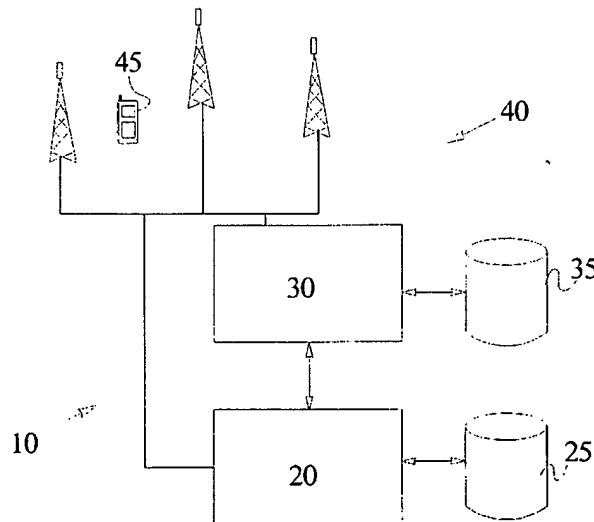
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holm (SE).(81) Designated States (national): AE, AG, AL, AM, AT, AT  
(utility model), AU, AZ, BA, BB, BG, BR, BY, BZ, CA,  
CH, CN, CO, CR, CU, CZ, CZ (utility model), DE, DE  
(utility model), DK, DK (utility model), DM, DZ, EC, EE,  
EE (utility model), ES, FI, FI (utility model), GB, GD, GE,  
GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ,  
LC, LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN,  
MW, MX, MZ, NO, NZ, PL, PT, RO, RU, SD, SE, SG, SI,  
SK, SK (utility model), SL, TJ, TM, TR, TT, TZ, UA, UG,  
US, UZ, VN, YU, ZA, ZW.(84) Designated States (regional): ARIPO patent (GH, GM,  
KE, LS, MW, MZ, SD, SL, SZ, TZ, UG, ZW), Eurasian  
patent (AM, AZ, BY, KG, KZ, MD, RU, TJ, TM), European  
patent (AT, BE, CH, CY, DE, DK, ES, FI, FR, GB, GR, IE,  
IT, LU, MC, NL, PT, SE, TR), OAPI patent (BF, BJ, CF,  
CG, CI, CM, GA, GN, GW, ML, MR, NE, SN, TD, TG).

Published:

— with international search report

[Continued on next page]

(54) Title: A METHOD AND SYSTEM FOR BROADCASTING MESSAGES INCLUDING LOCATION DEPENDANT TAR-  
GETED ADVERTISEMENT IN A CELLULAR NETWORK

(57) **Abstract:** The present invention relates to a targeted ad distributing system (10), said system comprising means for obtaining a position of a portable device (45) within a positionable area, the system comprising a geographical positioning processing means (30) for obtaining the position of said portable device (45), a processing means for handling and distributing ads, said ad distribution to said portable device (45) is based on demographic data and/or areas of interest of the owners/users, information on current geographical position and/or a geographical movement of said portable device. The portable device comprises a communication arrangement (451), that the system is arranged to provide said portable device with at least one special offer, and that said communication arrangement (50) upon reception of said at least one special offer, can be operated to communicate with an offer providing arrangement to obtain access to said offer.

WO 02/07474 A1

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*For two-letter codes and other abbreviations, refer to the "Guidance Notes on Codes and Abbreviations" appearing at the beginning of each regular issue of the PCT Gazette.*

A method and system for broadcasting messages including location dependant targeted advertisement in a cellular network.

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## TECHNICAL FIELD OF THE INVENTION

The present invention relates to a system and method for broadcasting messages including advertisement in a cellular network. More especially the invention relates to a targeted ad 10 distributing system. The system comprising means for obtaining a position of a portable device within a positionable area, the system comprising a geographical positioning processing means for obtaining the position of said portable device, a processing means for handling and distributing ads, said ad distribution to said portable device is based on demographic data and/or areas of interest of the owners/users, information on current 15 geographical position and/or a geographical movement of said portable device.

## BACKGROUND OF THE INVENTION

Location services are becoming more and more common today. Cellular network operators, 20 for example, can pinpoint in which cell and where in the cell a cellular phone (or a wireless device) is located.

When an advertiser advertises something, it is in his own interest to reach the target audience as good as possible. Today, advertisement is often directed to a certain target 25 audience by advertising in different magazines or papers and TV shows. For example, by advertising about tires in a car magazine the advertiser reaches a target audience with a high interest in cars.

To this can be added that trade of addresses to persons with a certain demography or areas 30 of interest is quite common.

It is also possible to use cellular phones for displaying ads. In some parts of the world, advertisements are sent to all cellular phones that are using a certain operator.

5 Priori Art discloses a number of techniques for forwarding advertisement to the terminals of a communications network.

WO 99/50775, for example, discloses a method for targeted advertising, suitable for use with networked devices with a visual display. Advertisements are selected to be presented 10 to a user based on a demographic and psychographic profile of the user, as well as response to previous advertisements by the user. In this way, targeted advertisements can be presented to the user on the visual display. In addition, various input devices are presented to allow the user to perform a transaction associated with the advertisement. Some of these transactions include calling the advertiser, placing an order for the advertised product or 15 service, and requesting more information about the advertised product or service from the advertiser.

This solution requires special terminals, which are connected to the network through 20 network wiring. Consequently, it cannot be applied in a flexible way for a more exact targeted advertisement.

According to US 5,852,775, a cellular telephone is provided with an ad server and a 25 memory for holding various commercial messages. The messages are either generic, or are tailored for specific demographically selected subscribers, or geographic cells. When communication is established either between a subscriber or a nonsubscriber, at least one of them gets either a generic or a specific commercial message.

As the area of a cell can vary, this system provides a less accurate targeted advertisement.

30 US 5,946,615, describes a system and method of providing the information necessary for

geographically based mobile services by translating public geographic information to corresponding mobile network structure. When an indication of a geographic area is received, the indication is translated to an indication of a portion of the mobile network corresponding to the geographic area and an indication of the service is transmitted to the 5 indicated portion of the mobile network. In a preferred embodiment, a broadcast message is transmitted over a mobile network to a plurality of mobile stations within a geographic area. When the system receives a message to be broadcast and an indication of the geographic area of the broadcast, the indication of the geographic area is translated to an indication of a portion of the mobile network corresponding to the geographic area. The 10 message is then transmitted to the indicated portion of the mobile network.

In WO 98/27778 is disclosed a method and apparatus for displaying greetings to mobile terminals identifying services associated with location based services. The system identifies a plurality of service zones in the system, and also transmits predefined services to mobile terminals when located in the service zones. The system transmits from each base station 15 local zone profile information to each of the mobile terminals located in those service zones. Each mobile terminal has stored therein subscriber zone profile information for which that mobile terminal can receive location based services. The mobile terminal also stores an associated greeting for each zone of subscriber zone profile information. The mobile terminal compares transmitted local zone information with the list of stored subscriber zone profile information, and when a match is found, the mobile terminal 20 displays the greeting associated with the subscriber zone profile information. By storing the associated greeting in the mobile terminal, the otherwise signaling of greeting information over the air interface is avoided.

25 A system and method for providing prioritized greetings to subscribers having cellular telephone services based on subscriber location is disclosed in WO 97/20441. The system identifies a plurality of service zones in the system, and also transmits predefined services to subscribers when located in the service zones. The system transmits service zone identification information from each service zone to each of the subscribers located in the 30 service zone. The system also transmits to each of the subscribers zone profile information

having an associated priority for which the subscriber receives differing predefined services. The system compares subscriber zone profile information with the service zone information transmitted and provides a greeting to the subscriber identifying the predefined service available to the subscriber located in that zone whereby any overlap in zones for 5 which a subscriber receives differing predefined services will result in the greeting relating to higher prioritized zone profile information.

In WO 9911078, a geographical database connected to a mobile radio network contains information about consumer services within the network and about a plurality of geographic 10 areas into which the service area of the network is divided. When a mobile station seeks to obtain information from the database by entering one or more search key words, the network determines the current geographic location of the mobile station within the network. Both the search keys and the mobile station's current location are used to search the database and return to the mobile station information about available consumer services 15 in different zones made up of geographic areas near its current location. The input and output from the database may be voice or text.

None of the above documents provide a solution according to the present invention.

## 20 SUMMARY OF THE INVENTION

Today, it is not possible to provide for directed and position accurate real time advertisements to the people on the move having a mobile terminal. Therefore, it is an object of the present invention to solve this problem and provide a method and system, 25 which allows an accurate and targeted advertisement, which provides a user with special offers and simplifies access to the offers.

As a result, it is possible for advertisers to reach a target group. Cellular phone subscribers can have a less expensive subscription if they accept advertising on their phone. An 30 advertising processing means ensures the anonymity of each cellular phone subscriber and

does not disclose any information about the actual user of the phone.

For these reasons, in the initially mentioned system said portable device comprises a communication arrangement. The system is arranged to provide said portable device with at least one special offer. The communication arrangement upon reception of said at least one special offer, can be operated to communicate with an offer providing arrangement to obtain access to said offer.

Preferably, the system is part of a cellular network, and the portable device is a portable device. The portable device can also be a computer device provided with a communication arrangement.

The information also comprises one or several of entrance into or exit from an area, movement from a first area to a second area, first time in an area, time in an area, common visited area, recently visited area etc.

For integrity reasons, the system comprises means for anonymizing references to a holder of the communication device matching when advertising.

20 Preferably, the ad is distributed using one of SMS, WAP, Email or ordinary voice call.

It is also possible to distribute ad to another location than the actual communication devices position based on a personal profile for a user as described in the processing means.

25 In one embodiment, the system is arranged to provide said communication device with special offers. The device is arranged to use said offer through an interface communicating with another device.

Moreover, the processing means may comprise a demographic profile, which changes 30 dynamically depending on daytime, position etc. It is also to distribute common ad to a

common location of several communication devices.

In one embodiment, the system comprises a further information database, including information on weather or tourist services, yellow pages etc., so that when information 5 about a special service, shop or place is required, also an ad with respect to said required information is sent to the user.

According to the invention, a method is presented for providing ad by means of distributing system. The system comprising means for obtaining a position of a portable device within a 10 positionable area, the system comprising a geographical positioning processing means for obtaining the position of said portable device, a processing means for handling and distributing ads, said ad distribution to said portable device is based on demographic data and/or areas of interest of the owners/users, information on current geographical position and/or a geographical movement of said portable device. The method comprises the steps of 15 providing said portable device with a communication arrangement, providing said portable device with at least one special offer from the system, and operating said communication arrangement upon reception of said at least one special offer to communicate with an offer providing arrangement to obtain access to said offer.

## 20 BRIEF DESCRIPTION OF THE DRAWING

In the following, the invention will be further described in a non-limiting way with reference to the accompanying drawings:

Fig. 1 shows a schematic diagram illustrating the main parts of a system according to the 25 invention, and

Fig. 2 is a schematic illustration of communication device, which parts of a system according to the invention.

## DETAILED DESCRIPTION OF THE EMBODIMENT

According to a preferred embodiment of the invention, an advertising system, which has information on the geographical position of the intended target audience, is provided.

5 a member of the target audience is close to an area that corresponds to an advertisement profile, it is substantially immediately sent to him in real time. An advertisement can also be transmitted when the person leaves an area or moves between two (or more) areas. The system can also keep track whether it is the first time that the person enters or leaves a certain area that also can be used as a criterion for selecting the target audience.

10

In the following, the invention is described with reference to an exemplary embodiment engaging a cellular communication network. However, the invention is not limited to a cellular network; any network providing position of a mobile device such as mobile phone, handheld computer (PDA), laptop etc., are assumed to be protected by the invention.

15

The system can be implemented in following way. The system 10 comprises an advertisement server 20 and a geographical positioning server 30. The advertisement server comprises a database 25, including different advertisements for different positions, profiles and needs. The advertisement server is connected to the geographical positioning server, 20 which in turn is directly or indirectly connected to a cellular network 40.

The (operator of) advertisement server 20 can subscribe for positions of cellular phones 45 (or other positionable mobile terminals) from the positioning server 30. The cellular phones selected for subscription can be those that have a certain subscription from the cellular

25 network operator. The advertisement server may include a profile for each subscription and its owner/user. In the profile, properties like age, sex, interests, areas of interest etc., are stored. The profile may also include positioning information, like a common visited location, locations recently visited etc.

30 The advertisers can then store advertisements in the advertising server, which are sent to a

cellular phone when a certain criteria is achieved, for example a combination of a demographic match for the owner/user and that the cellular phone entered some area. The advertising server can also give an anonymous handle of the cellular phone to the advertiser when a certain criteria are reached. The advertiser can then advertise directly to the cellular

5 phone.

In order to reach the cellular phone, different protocols can be used, such as SMS (Short Messages Services), WAP (Wireless Applications Protocol), E-mail etc. This can be a part of the user/owner profile and defines how the user would like to receive the advertisements.

10 It is also possible to advertise by a normal call to the cellular phone, utilizing for example pre-recorded voice or synthetic speech. A voice dialogue with a person providing some advertisement is also possible.

Clearly, it is possible to send the advertisements to another destination than the cellular

15 phone, for example through ordinary mail or email, depending on the current profile of a person.

The cellular phone subscriptions that the advertising server is aware of are those that have a certain subscription from the cellular network operator. For example, the subscriptions may

20 have a special pay model that gives the user/owner of the cellular phone some reduction on his subscription each time an advertisement is sent to him. Another example is that the advertisements received in the cellular phone can be used as "Discount coupons/vouchers" or other offers when the owner/user would like to purchase an advertised article or service.

25 As illustrated in Fig. 2, a communication device 245 is provided with infrared or radio (Bluetooth) communication means 451 or the like. The holder of the device 45 can use it to obtain the special offers or discounts from the system 40 and communicate with a receiver 50 at the site providing access to the offer. Thus, the offers can be suited for the holder of the phone and by communicating the offer via the phone to the receiver, the holder obtains

It is, also possible to integrate other information databases 25 in the system, such as weather or tourist services, yellow pages etc., preferably financed through advertisement, so that e.g. when information about a special service, shop, or place is required, also an ad is sent to the user with respect to said required information; for example, if the user looks for a shoe  
5 shop, an ad for a shoe trademark is sent to the user together with the addresses.

The invention is not limited the shown embodiments but can be varied in a number of ways without departing from the scope of the appended claims and the arrangement and the method can be implemented in various ways depending on application, functional units,  
10 needs and requirements etc.

## CLAIMS

1. A targeted ad distributing system (10), said system comprising means for obtaining a position of a portable device (45) within a positionable area, the system comprising a geographical positioning processing means (30) for obtaining the position of said portable device (45), a processing means for handling and distributing ads, said ad distribution to said portable device (45) is based on demographic data and/or areas of interest of the owners/users, information on current geographical position and/or a geographical movement of said portable device,

10 characterised in

that said portable device comprises a communication arrangement (451), that the system is arranged to provide said portable device with at least one special offer, and that said communication arrangement (50) upon reception of said at least one special offer, can be operated to communicate with an offer providing arrangement to obtain

15 access to said offer.

2. The system according to claim 1,

characterised in

that the system is part of a cellular network (40), and that said portable device is a portable device.

3. The system according to claim 1,

characterised in

that said portable device is a computer device provided with a communication arrangement.

4. The system according to any of preceding claims,

characterised in

that said information also comprises one or several of entrance into or exit from an area, movement from a first area to a second area, first time in an area, time in an area,

30

common visited area, recently visited area etc.

5. The system according to claim 1,

characterised in

5 that the system includes means for anonymizing references to a holder of the communication device matching when advertising.

6. The system according to any of preceding claims,

characterised in

10 that said ad is distributed using one of SMS, WAP, Email or ordinary voice call.

7. The system according to any of preceding claims,

characterised in

that said ad is distributed to another location than the actual portable devices position

15 based on a personal profile for a user as described in the processing means.

8. The system according to any of preceding claims,

characterised in

that said processing means includes a demographic profile, which changes dynamically

20 depending on daytime, position etc.

9. The system according to any of preceding claims,

characterised in

that it distributes common ad to a common location of several communication devices.

25

10. The system according to any of preceding claims,

characterised in

that the system comprises a further information database (25), include information on weather or tourist services, yellow pages etc., so that when information about a special

30 service, shop or place is required, also an ad with respect to said required information

is sent to the user.

11. The system according to any of preceding claims,

characterised in

5 that said communication arrangement is one of IR, Bluetooth or radio frequency  
transceivers.

12. A method of providing targeted ad by means of distributing system (10), said system

comprising means for obtaining a position of a portable device (45) within a

10 positionable area, the system comprising a geographical positioning processing means  
(30) for obtaining the position of said portable device (45), a processing means for  
handling and distributing ads, said ad distribution to said portable device (45) is based  
on demographic data and/or areas of interest of the owners/users, information on current  
geographical position and/or a geographical movement of said portable device,

15 characterised by

providing said portable device with a communication arrangement (451),

providing said portable device with at least one special offer from the system, and  
operating said communication arrangement (50) upon reception of said at least one  
special offer to communicate with an offer providing arrangement to obtain access to  
said offer.

20

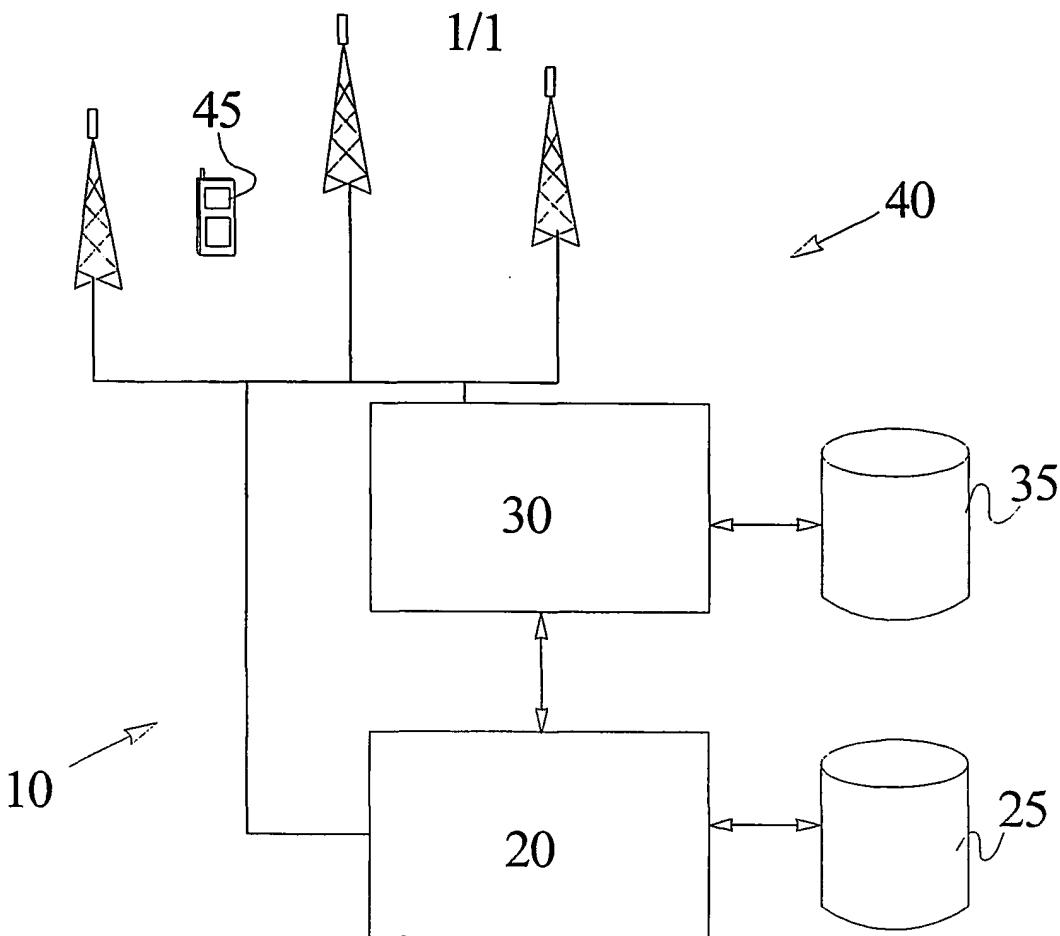


Fig. 1

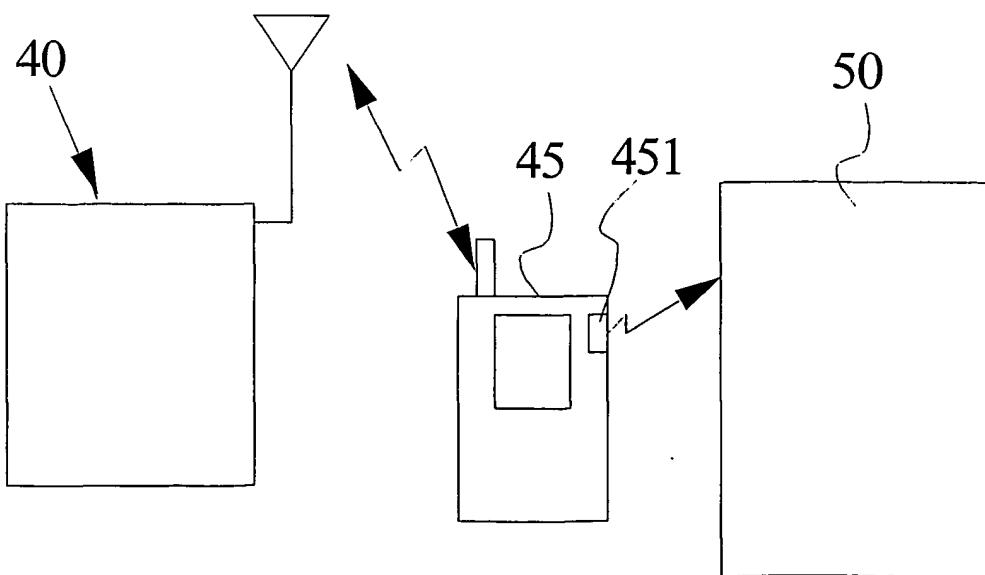


Fig. 2

## INTERNATIONAL SEARCH REPORT

International application No.

PCT/SE 01/01642

## A. CLASSIFICATION OF SUBJECT MATTER

IPC7: H04Q 7/38

According to International Patent Classification (IPC) or to both national classification and IPC

## B. FIELDS SEARCHED

Minimum documentation searched (classification system followed by classification symbols)

IPC7: H04Q

Documentation searched other than minimum documentation to the extent that such documents are included in the fields searched

SE,DK,FI,NO classes as above

Electronic data base consulted during the international search (name of data base and, where practicable, search terms used)

## C. DOCUMENTS CONSIDERED TO BE RELEVANT

Category*	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
X	WO 9827778 A2 (TELEFONAKTIEBOLAGET LM ERICSSON), 25 June 1998 (25.06.98), page 3, line 7 - page 7, line 14 --	1-12
X	WO 9720441 A1 (TELEFONAKTIEBOLAGET LM ERICSSON), 5 June 1997 (05.06.97), page 2, line 19 - page 4, line 29 --	1-12
X	WO 9911078 A1 (TELEFONAKTIEBOLAGET LM ERICSSON), 4 March 1999 (04.03.99), page 2, line 28 - page 4, line 10 --	1-12

 Further documents are listed in the continuation of Box C. See patent family annex.

## \* Special categories of cited documents:

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- "E" earlier application or patent but published on or after the international filing date
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- "P" document published prior to the international filing date but later than the priority date claimed

"T" later document published after the international filing date or priority date and not in conflict with the application but cited to understand the principle or theory underlying the invention

"X" document of particular relevance: the claimed invention cannot be considered novel or cannot be considered to involve an inventive step when the document is taken alone

"Y" document of particular relevance: the claimed invention cannot be considered to involve an inventive step when the document is combined with one or more other such documents, such combination being obvious to a person skilled in the art

"&" document member of the same patent family

Date of the actual completion of the international search

18 October 2001

Date of mailing of the international search report

19-10-2001

Name and mailing address of the ISA/  
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Box 5055, S-102 42 STOCKHOLM

Authorized officer

Stefan Hansson/ja

## INTERNATIONAL SEARCH REPORT

International application No.

PCT/SE 01/01642

## C (Continuation). DOCUMENTS CONSIDERED TO BE RELEVANT

Category*	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
X	US 5579535 A (ORLEN ET AL), 26 November 1996 (26.11.96), column 1, line 49 - column 2, line 7, figures 3,5  -- -----	1-12

**INTERNATIONAL SEARCH REPORT**  
Information on patent family members

01/10/01

International application No.	
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